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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/632,215	08/03/2000	Krishna Balachandran	Balachandran-17-9-50	1173

7590 04/26/2004

TROUTMAN, SANDERS, MAYS & VALENTINE  
1660 INTERNATIONAL DRIVE  
SUITE 600, TYSONS CORNER  
MCLEAN,, VA 22102

EXAMINER
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WILSON, ROBERT W

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 04/26/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/632,215

Applicant(s)

BALACHANDRAN ET AL.

Examiner

Robert W Wilson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 27 is/are rejected.
- 7) ☒ Claim(s) 23-26 and 28-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

**1.0** The application of Krishna Balachandran et. al. entitled "METHODS AND DEVICES FOR SCHEDULING TRANSMISSIONS IN INTERFERENCE-LIMITED NETWORKS" filed on 8/3/2000 without foreign priority and amended on 3/26/2004 .

#### ***Claim Rejections - 35 USC § 112***

**2.0** The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**3.0** **Claims 1-18** are rejected under 35 U.S.C. 112/ 1<sup>st</sup> paragraph because they are single means claims in which the breadth of the claim cannot be ascertained.

Referring to **Claims 1 & 13**, **Claims 1 & 13** recite a device in the preamble followed by language describing the function of the device. The applicant has implied the word "means" by defining a claim with a device followed by its function. In re Hyatt held that a single means held nonenabling scope of the claim because the specification disclosed only those means known to the inventor; whereas, the claim covers every conceivable structure (means) for achieving the state property while the specification discloses at most only those known to the inventor.

**In Addition:**

**Claims 2-12 & 14-18** are rejected because they do not recite an additional means.

#### ***Claim Rejections - 35 USC § 103***

**4.0** The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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**5.0 Claims 1-6, 9, 19-22, & 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumner (U.S. Patent No.; 6,091,947).

Referring to **Claim 1**, Sumner teaches: A device for scheduling transmissions in an interference-limited environment (Base Stations or device for scheduling transmissions per Figs 4& 5 or col. 7 line 6-col. 9 line 3. Interference-limited environment reflects intended use and consequently was given no weight.)

Send transmission test signals to one or more terminal units (The Base Station sends a test signal to the mobile handsets or terminal unit per col. 7 line 6 –col. 9 line 3) and prioritize transmission request signals from the one or more terminal units (The Base Station prioritizes call connections or requests from the handsets or terminal units per col. 7 line 6-col. 9 line 3) based upon achievable data rates (The Base Station determines whether to send a voice signal or store the voice signal as based upon available bandwidth or achievable data rate between the Base Station and the mobile handset or terminal per col. 7 line 6-col. 9 line 3), each rate associated with one of the test signals (The available data rate is determined based upon the test signal per col. 7 line 6-col. 9 line 3)

Sumner does not expressly call for: request but teaches placing a call per col. 7 line 6-col. 9 line 3

It would have been obvious to one of ordinary skill in the art at the time of the invention that placing a call performs the same function as making a request.

Referring to **Claim 19**, Sumner teaches: A method for scheduling transmissions in an interference-limited environment (Base Stations performs method for scheduling transmissions per Figs 4& 5 or col. 7 line 6-col. 9 line 3. Interference-limited environment reflects intended use and consequently was given no weight.)

Sending transmission test signals to one or more terminal units (The Base Station sends a test signal to the mobile handsets or terminal unit per col. 7 line 6 –col. 9 line 3)

Prioritizing transmission request signals from the one or more terminal units (The Base Station prioritizes call connections or requests from the handsets or terminal units per col. 7 line 6-col. 9 line 3) based upon achievable data rates (The Base Station determines whether to send a voice signal or store the voice signal as based upon available bandwidth or achievable data rate between the Base Station and the mobile handset or terminal per col. 7 line 6-col. 9 line 3), each rate associated with one of the test signals (The available data rate is determined based upon the test signal per col. 7 line 6-col. 9 line 3)

Sumner does not expressly call for: request but teaches placing a call per col. 7 line 6-col. 9 line 3

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It would have been obvious to one of ordinary skill in the art at the time of the invention that placing a call performs the same function as making a request.

**In Addition:**

Referring to **Claims 2 & 20** wherein the device or method is further adapted to assign a highest priority to a transmission request signal associated with a highest achievable data rate (The Base Station determines if there is adequate bandwidth in order to send or store the voice as a message per col. 7 line 6 col. 9 line 3)

Referring to **Claims 3 and 21**, wherein the device or method further adapted to authorize a terminal unit, of the one or more terminal units, associated with the highest achievable data rate to send a transmission (The Base Station determines if there is adequate bandwidth in order to send or store the voice as a message per col. 7 line 6-col. 9 line 3)

Referring to **Claims 4 or 22**, wherein the device is further adapted to authorize a terminal unit, of the one or more terminal units, associated with a prioritized transmission request signal to send a transmission (The Base station authorizes sending the voice signal or storing a voice message based upon available bandwidth determined from the test signal per col. 7 line 6 –col. 9 line 3)

Referring to **Claim 5**, wherein the device comprises a bandwidth allocation unit (The Base station authorizes sending the voice signal or storing a voice message based upon available bandwidth determined from the test signal or allocates bandwidth per col. 7 line 6 –col. 9 line 3)

Referring to **Claim 6**, wherein the device comprises a multiplexer (The Base Station sends either voice or data per col. 7 line 6-col. 9 line 3. It would have been obvious to one of ordinary skill in the art at the time of the invention that the Base Station is a multiplexer in order for it to send voice and or data)

Referring to **Claim 9**, wherein the device is further adapted to prioritize transmission test signals from the one or more terminal units based on achievable data rates (col. 7 line 6-col. 9 line 3)

Referring to **Claim 27**, wherein the device or method is further adapted to authorize a transmission to a terminal unit, of the one or more terminal units, associated with a prioritized transmission test signal (col. 7 line 6-col. 9 line 3)

***Claim Objections***

**8.0** **Claims 1-32** are objected to because of the following informalities: The wording “each rate associated with one of the test signals” is not clearly understandable to the reader in **Claims 1, 13, 19, & 29**. The examiner recommends that the applicant clarify if there is a one to one

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correspondence with a specific test signal and the data rate being tested. All of the other claims depend upon **Claims 1, 13, 19, and 29**; consequently, they are also objected to. Appropriate correction is required.

### *Claim Objections*

**9.0** **Claims 23-26 & 27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The present invention is directed to a communication method which provided polling between the base station and the terminal unit and also provided for prioritization of test signal being sent from the base station. The closest prior art Sumner (U.S. Patent No.: 6,091,947) discloses a base station and handset in which the base station send a test signal to the handset which can be utilized to test the channel so that requests can be prioritized. The closest prior art Sumner does not disclose:

“periodically polling ...” as claimed in Claims 23-24.

or “prioritization of test signals based upon achievable rates...” as claimed in Claims 25-26, & 28.

### *Response to Amendment*

**10.0** Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

The examiner respectively disagrees with the applicant's argument that **Claims 1-18** should not be interpreted as a single means claim. Referring to Claims 1 & 13, Claims 1 & 13 recite a device in the preamble followed by language describing the function of the device. The applicant has implied the word “means” by defining a claim with a device followed by its function. In re Hyatt held that a single means held nonenabling scope of the claim because the specification disclosed only those means known to the inventor; whereas, the claim covers every conceivable structure (means) for achieving the state property while the specification discloses at most only those known to the inventor.

The applicant has argued that the previous reference, “395 Patent”, does not teach a test signal. The new reference, Sumner (U.S. Patent No.; 6,091,947) teaches a test signal which is sent from the Base Station to the handset per Figs 4 & 5 or test signal per col. 7 line 23-42 or per col. 7 line 6-col. 9 line 3).

The examiner respectively disagrees with the applicant's argument that the previous reference “Patent 395” did not teach or disclose “ scheduling transmissions in an interference limited

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environment. The applicant defined "scheduling transmission in an interference limited environment" in the preamble which the examiner interpreted as intended use; consequently, the examiner finds this argument unpersuasive.

**11.0** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

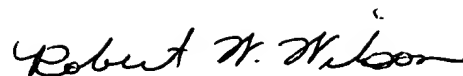
### ***Conclusion***

**12.0** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert W Wilson whose telephone number is 703/305-4102. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Olms can be reached on (703) 305-4703. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

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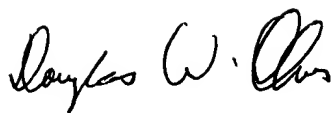
Robert W Wilson

Examiner

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RWW

April 13, 2004



DOUGLAS OLMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600